

by one of ordinary skill in the art are considered to be within the scope of the present invention.

What is claimed is:

1. A method of making a pump device for conveying a fluidic medium, the method comprising:

providing a piston channel in a housing, where the piston channel has a generally linear, longitudinal axis;

providing an inlet port in fluid flow communication with the piston channel and configured for connection to a source of fluidic medium;

providing an outlet port in fluid flow communication with the piston channel;

providing a piston having a first piston section and a second piston section coupled together for limited movement, relative to each other, the second piston section having a surface for receiving a drive force from a drive shaft; and

supporting the piston within the piston channel for movement along the longitudinal axis of the piston channel between fill, pull and dispense positions, when a drive force is received from a drive shaft such that:

in the fill position, the first and second piston sections are separate to form a chamber having volume between the first and second piston sections, and the chamber is aligned in fluid flow communication with the inlet port;

in pull positions, the first and second piston sections are separated and the chamber formed between the first and second piston sections is located within the channel, between the inlet port and the outlet port, out of fluid flow communication with the inlet port and the outlet port; and

in the dispense position, the chamber between the first and second piston sections is aligned in fluid flow communication with the outlet port.

2. A method according to claim 1, further comprising supporting the pump device in a housing structure of an infusion delivery device having a drive device operatively coupled to the drive shaft for driving the drive shaft to apply the drive force to the surface of the second piston section.

3. A method according to claim 2, wherein the housing structure of the infusion delivery device comprises a first housing portion and a second housing portion and wherein the method further comprises:

providing the first housing portion with a surface for securing the first housing portion to a user;

providing the first housing portion and the second housing portion with connection structure for selectively engaging the second housing portion with the first housing portion for operation and disengaging the second housing portion and first housing portion to allow disposal of the first housing portion without disposing of the second housing portion;

supporting the pump device with the first housing portion; and

supporting the drive device with the second housing portion.

4. A method according to claim 3, further comprising supporting the drive shaft with the second housing portion.

5. A delivery device for delivering an infusion medium to a user, the device comprising:

a first housing portion adapted to be secured to a user;

a second housing portion configured to be selectively engaged with and disengaged from the first housing portion to allow disposal of the first housing portion without disposing of the second housing portion, the second housing portion having an enclosed interior volume;

a drive shaft supported by the second housing portion, for movement in a generally linear dimension;

a drive device operatively connected to the drive shaft, to selectively move the drive shaft in the generally linear dimension; and

a pump device supported by the first housing portion, the pump device comprising:

a housing provided with a piston channel having a generally linear, longitudinal axis, an inlet port in fluid flow communication with the channel and configured for connection to a reservoir, and an outlet port in fluid flow communication with the channel and configured for connection in fluid flow communication with an injection site;

a piston located in the piston channel and having a first piston section and a second piston section coupled together for limited movement, relative to each other, the second piston section having a surface for operable engagement with the drive shaft when the second housing portion and first housing portion are engaged, wherein the piston is moveable with movement of the drive shaft along the longitudinal axis of the piston channel between fill, pull and dispense positions, such that:

in the fill position, the first and second piston sections are separate to form a chamber having volume between the first and second piston sections, and the chamber is aligned in fluid flow communication with the inlet port;

in the pull position, the first and second piston sections are separated and the chamber formed between the first and second piston sections is located within the channel, between the inlet port and the outlet port, out of fluid flow communication with the inlet port and the outlet port;

in the dispense position, the chamber between the first and second piston sections is aligned in fluid flow communication with the outlet port.

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